

ABSTRACT

A method for time series-based localized predictive resource reservation for handoff in multimedia wireless networks models the amount of network resources $R(t)$ necessary to handoff a mobile terminal in a wireless IP network as an ARIMA (p,1,q) process. An ARIMA (p,1,q) process is a Weiner process wherein the future value of a stochastic variable depends only on its present value. The ARIMA (p,1,q) process includes an autocorrelation component, wherein the future value of a stochastic variable is based on its correlation to past values, and a moving average component that filters error measurements in past variable observations. Each wireless IP base station determines its own ARIMA (p,1,q) model and uses its model to locally predict the amount of network resources $R(t)$ it needs to reserve for the handoff of mobile terminals.